

## MEMORANDUM

### INTERMOUNTAIN POWER SERVICE CORPORATION

TO: George W. Cross

Page 1 of 3

FROM: Dennis K. Killian

DATE: February 13, 2003

SUBJECT: Boiler Testing Equipment Rental, PR# 185848

Please approve the attached Purchase Requisition for the rental of test equipment to measure combustion gas properties (NOx, CO, O2 & CO2) to establish boiler baseline pre-outage conditions and conduct post-outage tuning of the overfire air system plus determine final acceptance of modified boiler components (superheat platen extension and overfire air). Rental includes 11 analyzers, 1 data logger and controller, plus a technician for initial setup and training. Total estimated cost is \$65,000.

We have recently been directed by the Utah State of Air Quality, as part of the Notice Of Intent (NOI) approval process, to document baseline combustion conditions on IGS Unit 1 prior to the Spring Outage 2003. This has moved up our original timeline two months for conducting post-Outage testing. IPSC Engineering Group will be conducting the performance testing. However, we do not have NOx, CO, O2 & CO2 gas analyzers, plus data logger and controller for electronic data acquisition. We do have the boiler outlet test probes (16) and thermocouples (64), bubblers, chillers, knockout bottles, desiccant filters, vacuum pumps and supporting hardware.

Post-Outage testing on the boiler will consist of several weeks of tuning and diagnostics for setup of the burners and overfire air system, prior to the final acceptance testing. The primary objective of the overall testing is to see if the manufacturer has met contractual guarantees on the superheat platen extension and overfire air system. Secondary test objectives are to determine where best the overfire air system works and to establish operator guidance for use of this system.

Tuning and diagnostics will be accomplished using the combustion gas analyzers, by conducting multipoint gas sampling at the boiler outlet duct to establish NOx, CO, O2, CO2 & temperature conditions at both 875 MWgross and 950 MWgross load levels. There will be a 64 point grid (32 points of both east and west sides) to determine the degree of gas stratification. Knowing the amount and location of stratification (high and low zones),